

# Safety and Preparedness



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Grade K

**Unit Essential Question:** How do I prepare for severe weather and stay safe?

**Teacher Background:**

**Lesson Overview:**

Students will discuss the different types of severe weather that develops during the spring and summer months, and learn safety procedures along with develop knowledge in preparedness activities. Severe weather topics that will be covered: tornadoes, large hail, strong wind, heavy rain, and lightning. The primary emphasis of this activity is preparedness and safety.

**Potential Misconceptions:**

There will always be time to react and prepare when severe weather strikes. Weather can happen in a flash. Heavy rain can fall unexpectedly and become devastating. Water is very powerful and can wash away school buses and knock adults off their feet. Severe weather should never be taken lightly.

**Lesson Goals:**

**Objective:** Students will be able to demonstrate knowledge of terms through question and answer.

**Learning Target:** Students will use weather icons to display knowledge of severe weather, learn preparedness activities for severe weather events and demonstrate basic safety knowledge on lightning, large hail, strong winds, heavy rain and tornadoes.

**Standard Information**

**Performance Expectation (PE)** KESS3-2: Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather.

**Science and Engineering Practices**

**Disciplinary Core Ideas**

**Crosscutting Concepts**

**Obtaining, Evaluating, and Communicating Information** Obtaining, evaluating, and communicating information in K–2 builds on prior experiences and uses observations and texts to communicate new information.

- Read grade-appropriate texts and/or use media to obtain scientific information to describe patterns in the natural world.

**ESS2.D: Weather and Climate**  
Weather is the combination of sunlight, wind, snow or rain, and temperature in a particular region at a particular time. People measure these conditions to describe and record the weather and to notice patterns over time.

**ESS3.B: Natural Hazards**  
Some kinds of severe weather are more likely than others in a given region. Weather scientists forecast severe weather so that the communities can prepare for and respond to these events.

**Cause and Effect**  
Events have causes that generate observable patterns.

**Lesson Preparation:**

Materials:	Group Size:	Management:
Weather cards Weather graphics (picture at end of the lesson) Weather icons	<b>Whole class</b>	At the end of this lesson table, you will find images that you can use with your students to discuss the different types of severe weather, different ways to prepare and how to react to severe weather. You will also find a FEMA Emergency Supply Kit pamphlet and a family communication plan handout.

**Lesson Plan:**

Suggested Timing	Agenda:
5 min	Review. Look at the weather icons. What do they each symbolize? What do they mean?
15 min	How can you and your family stay safe during severe weather?
15 min	How can you prepare for severe weather?

**Teaching Procedures:**

**Teaching Notes**

**Engage**

- Briefly review each form of severe weather using the icons shown below. Ask your students what each icon means.

2. Understanding how to protect you or your family and move to safety fast, especially when caught off guard by extreme weather, is key to survival. Display each safety graphic with Owlle to your students and talk about how to become safe. Ask the students if they know what to do if they are playing on the playground and lightning occurs. This would be a great time to go over local weather policy. For more information on developing an emergency plan for schools, see: "A Guide to Developing a Severe Weather Plan for Schools" pamphlet.
3. With just a few simple steps, you can become weather-ready and become prepared for anything Mother Nature throws at you. Ask the students if they have a severe weather plan? Ask the students if they have an emergency kit on standby. Ask the students what types of items they would have in an emergency kit. Do they have a plan for their pets? Do they have medical supplies on standby? Ask the students if they know what to do after the event ends? Do they have a location to meet at after a tornado? Do they know where to go if a flood threatens their home?

#### Explore

4. Have the students look around the room and decide what in the classroom would be in an emergency operation kit for severe weather. Talk about which items are good and which items are not necessary.
5. Practice a tornado drill. Have each student practice what would happen if severe weather was an impending threat. Make sure each student can take cover in 60 seconds or less. Make sure students with disabilities have the necessary help that they need. Practice! Practice! Practice!

#### Science Notebook:

***Make sure students DATE each page of their notebook.***

Ask the students to draw a picture and/or write about how they would take cover if there was a tornado threat.

#### Assessment:

Formative Assessment: In their Science Notebooks draw or write about what they would put in an emergency kit at home.

#### Literacy Connections:

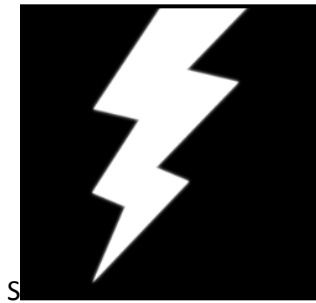
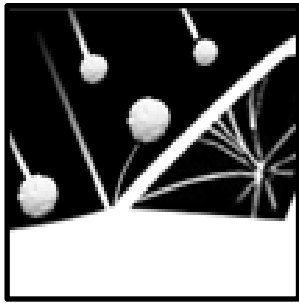
Vocabulary		Included or Suggested Texts (Title; <i>Author</i> , Year, Type (book/article), Grade, LEXILE)
New or Recently Introduced	Familiar Terms	
Emergency kit	Tornado Lightning Heavy Rain Strong Wind Large Hail	

#### Differentiation:










*Below are some suggestions for modifying lessons for individuals or groups of students.*

Students that may need	Students that may need more support:
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more challenge:	
<b>Think Outside the BOX!</b>	
ELA Math Others:	
<b>Reproducible Student Materials:</b>	
<b>See next pages</b>	



# Understanding Severe Weather Events

	<b>Tornado</b> <p>Tornadoes are violent rotating columns of air generated from a thunderstorm that reaches the ground. Tornadoes can destroy buildings and cause significant damage.</p> <p><u>Action:</u> Take shelter immediately in a sturdy structure</p>
	<b>Large Hail</b> <p>Hail are pieces of ice that fall from the sky during a thunderstorm. Hail comes in many shapes and sizes and can produce damage to vehicles, crops and buildings.</p> <p><u>Action:</u> Move indoors away from windows</p>
	<b>Strong Wind</b> <p>Strong winds are powerful downward movements of air (a downdraft) in a severe thunderstorm. Winds can be as strong as 80 to 100 mph and knock over trees and damage buildings.</p> <p><u>Action:</u> Move indoors and stay away from all windows</p>
	<b>Heavy Rain</b> <p>Heavy rain is an abundant amount of rainfall in a short period of time. Thunderstorms that are slow moving and have very humid air produce heavy rain. Heavy rain causes flash flooding.</p> <p><u>Action:</u> Move to higher ground fast</p>
	<b>Lightning</b> <p>Lightning is a giant spark of electricity that is 5 times hotter than the sun in the atmosphere, or between the atmosphere and the ground. Lightning occurs during thunderstorms and is extremely dangerous.</p> <p><u>Action:</u> When thunder roars, go indoors!</p>
<div><a href="https://www.nws.noaa.gov/os/thunderstorm">nws.noaa.gov/os/thunderstorm</a><span>Weather Forecast Office</span><b>Binghamton, NY</b><a href="https://weather.gov/bgm">weather.gov/bgm</a>   <a href="https://twitter.com/NWSBinghamton">@NWSBinghamton</a></div>	

# Lightning

## Always Be Safe!



If outside...

Picnic shelters, dugouts, small buildings without plumbing or electricity are not safe!

Do not lean against concrete walls or floors.

The safest place to go is in a building with electricity and/or plumbing or a metal-topped vehicle with the windows closed.

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# Lightning



**If you hear thunder get to a safe place fast!**

**Grab your NOAA weather radio to help you know when it is safe to go back outside.**

**Wait 30 minutes to resume activities.**



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# Large Hail

Large hail falls from strong thunderstorms in muggy and often warm environments.



Move quickly to a safe place and stay away from windows.

Hail comes in many shapes and sizes. Hail can be as small as peas and can be as large as a computer CD-DVD.



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# Strong Winds



Winds from thunderstorms can create as much damage as weak tornadoes.

Move quickly to a sturdy building and stay away from all windows. Picnic shelters and tents are not safe.

If you are in a car with your parents, have them pull over on the side of the road. Do not park under overpasses.



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# Heavy Rain Can Happen In A Flash

Never drive or walk across completely water covered bridges and roadways.

It is NEVER safe to walk into flood waters!

When a flood happens, move to higher grounds!



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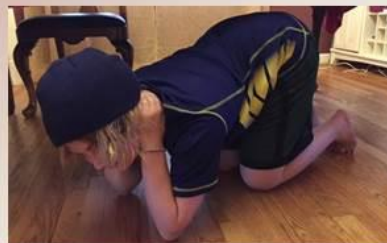
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# Tornadoes

Move quickly inside!! Go to a basement or the lowest floor. Move to the center room away from all Windows! (NO mobile homes!!!!)

Crouch as low as possible to the floor. Face downward and cover your head with your hands.



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# Emergency Kit



- ☐ Water
- ☐ Food for 3 days
- ☐ NOAA Weather radio
- ☐ Books, games, puzzles
- ☐ First aid kit
- ☐ Whistle for help
- ☐ Can opener
- ☐ Medications
- ☐ Pet food
- ☐ Important documents in a waterproof container



**If you have any suggestions to improve the lesson, please contact us at:  
Katherine.Hawley@noaa.gov**